

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Canceled).

2. (Previously presented) The solder deposition method according to claim 8, wherein said step of forming a dam includes the steps of:

forming a resin film on the surface of said substrate; and

providing an opening part in said resin film so that a dam is formed around an electrode on a substrate.

3. (Previously presented) The solder deposition method according to claim 8, wherein said dam is not removed after depositing solder.

4. (Previously presented) The solder deposition method according to claim 8, wherein said substrate is a via-on-pad structured substrate.

5-7. (Canceled).

8. (Currently amended) A solder deposition method comprising the steps of: forming a dam around an electrode on a substrate; applying a solder precipitating composition to said substrate; and

heating the resulting substrate so as to deposit form a solder on the surface of said electrode,

wherein said solder precipitating composition comprises a tin powder; and a silver or copper complex of at least one member selected from the group consisting of silver ions and copper ions, and at least one member selected from the group consisting of aryl phosphines, alkyl phosphines and azoles.

9. (Previously presented) A solder deposition method comprising the steps of:

forming a dam around an electrode on a substrate;

applying a solder precipitating composition to said substrate; and heating the resulting substrate so as to deposit solder on the surface of said electrode while heating said solder precipitating composition applied,

wherein said solder precipitating composition comprises a tin powder and a salt of at least one metal selected from the group consisting of lead, copper and silver.

10. (Previously presented) The solder deposition method according to claim 9, wherein said step of forming a dam includes the steps of:

forming a resin film on the surface of said substrate; and

providing an opening part in said resin film so that a dam is formed around an electrode on a substrate.

11. (Previously presented) The solder deposition method according to claim 9, wherein said dam is not removed after depositing solder.

12. (Previously presented) The solder deposition method according to claim 9, wherein said substrate is a via-on-pad structured substrate.

13. (New) A solder deposition method comprising the steps of:
forming a dam around an electrode on a substrate;
applying a solder precipitating composition comprising a tin powder and a silver or copper complex of at least one member selected from the group consisting of aryl phosphines, alkyl phosphines and azoles to said substrate; and
heating the resulting substrate, whereby the tin powder reacts with the complex so as to precipitate a solder on the surface of said electrode.

14. (New) A solder deposition method comprising the steps of:
forming a dam around an electrode on a substrate;
kneading a composition comprising tin powder and a silver or copper complex of at least one member selected from the group consisting of aryl phosphines, alkyl phosphines and azoles to form a solder precipitating composition;
applying said solder precipitating composition to said substrate; and
heating the resulting substrate so as to deposit a solder on the surface of said electrode.

15. (New) A solder deposition method comprising the steps of:
forming a dam around an electrode on a substrate;
applying a solder precipitating composition comprising a tin powder and a salt of at least one metal selected from the group consisting of lead, copper and silver to said substrate; and

heating the resulting substrate, whereby the tin powder reacts with the salt so as to precipitate solder on the surface of said electrode.

16. (New) A solder deposition method comprising the steps of:

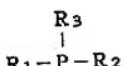
forming a dam around an electrode on a substrate;

kneading a composition comprising tin powder and a salt of at least one metal selected from the group consisting of lead, copper and silver to form a solder precipitating composition;

applying a solder precipitating composition to said substrate; and

heating the resulting substrate so as to deposit a solder on the surface of said electrode while heating said solder precipitating composition applied.

17. (New) The solder deposition method according to claim 8, wherein the phosphine is represented by formula (1)



wherein R₁, R₂ and R₃ each represents a substituted or non-substituted aryl group, or a substituted or non-substituted chain or cyclic alkyl group having 1 to 8 carbon atoms; hydrogen of the aryl group may be substituted with an alkyl having 1 to 8 carbon atoms, an alkoxy group having 1 to 8 carbon atoms, a hydroxyl group, an amino group or a halogen atom at any position; hydrogen of the alkyl group may be substituted with an alkoxy group having 1 to 8 carbon atoms, an aryl group, a hydroxyl group, an amino group or a halogen at any position; and R₁, R₂ and R₃ may be the same or different.

18. (New) The solder deposition method according to claim 8, wherein the aryl phosphines is triphenyl phosphine, tri(o-, m- or p-tolyl) phosphine or tri(p-methoxyphenyl) phosphine.

19. (New) The solder deposition method according to claim 8, wherein the alkyl phosphines is tributyl phosphine, trioctyl phosphine, tris(3-hydroxypropyl) phosphine, or tribenzyl phosphine.

20. (New) The solder deposition method according to claim 8, wherein the complex of aryl phosphines or alkyl phosphines is cationic and the counter anion is an organic sulfonic ion, organic carboxylic ion, halogen ion, nitric ion or sulfuric ion, or mixtures thereof.

21. (New) The solder deposition method according to claim 20, wherein the organic sulfonic acid is a methanesulfonic acid, 2-hydroxyethanesulfonic acid, 2-hydroxypropane-1-sulfonic acid, trichloromethanesulfonic acid, trifluoromethanesulfonic acid, benzenesulfonic acid, toluenesulfonic acid, phenolsulfonic acid, cresolsulfonic acid, anisolesulfonic acid or naphthalenesulfonic acid.

22. (New) The solder deposition method according to claim 20, wherein the organic carboxylic acid is a monocarboxylic acid, dicarboxylic acid, hydroxycarboxylic acid, or halogen-substituted carboxylic acid.

23. (New) The solder deposition method according to claim 22, wherein the organic carboxylic acid is formic acid, acetic acid, propionic acid, butanoic acid, octanoic acid, oxalic

acid, malonic acid, succinic acid, lactic acid, glycolic acid, tartaric acid, citric acid, monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, trifluoroacetic acid or perfluoropropionic acid.

24. (New) The solder deposition method according to claim 8, wherein the azoles is tetrazole, triazole, benzotriazole, imidazole, benzimidazole, pyrazole, indazole, thiazole, benzothiazole, oxazole, benzoxazole, pyrrole, indole and derivatives thereof, or a mixture of two or more.

25. (New) The solder deposition method according to claim 24, wherein the azole is tetrazole, 5-mercaptop-1-phenyltetrazole, 1,2,3-triazole, 1,2,4-triazole, 3-mercaptop-1,2,4-triazole, benzotriazole, tolyltriazole, carboxybenzotriazole, imidazole, 2-mercaptopimidazole, benzimidazole, 2-octylbenzimidazole, 2-phenylbenzimidazole, 2-mercaptopbenzimidazole, 2-methylthiobenzimidazole, pyrazole, indazole, thiazole, benzothiazole, 2-phenylbenzothiazole, 2-mercaptopbenzothiazole, 2-methylthiobenzothiazole, isoxazole, anthranil, benzoxazole, 2-phenylbenzoxazole, 2-mercaptopbenzoxazole, pyrrole, 4,5,6,7-tetrahydroindole or indole.

26. (New) The solder deposition method according to claim 9, wherein the salt is a salt of an organic carboxylic acid or organic sulfonic acid.

27. (New) The solder deposition method according to claim 26, wherein the organic carboxylic acid is monocarboxylic acid, dicarboxylic acid having 1 to 40 carbon atoms, lower fatty acid, fatty acid obtained from oils and fats of animal and plant, various synthetic acids which are obtained from organic-synthesis reactions, or resin acid.

28. (New) The solder deposition method according to claim 27, wherein the organic carboxylic acid is formic acid, acetic acid, propionic acid, capronic acid, caprylic acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, linolic acid, 2,2-dimethylpentanoic acid, 2-ethylhexanoic acid, iso-nonanoic acid, 2,2-dimethyloctanoic acid, n-undecanoic acid; pimaric acid, abietic acid, dehydroabietic acid, dihydroabietic acid; naphthenic acid obtained from petroleum; dimer acid which is obtained from tall oil fatty acid or soybean fatty acid by synthetic reaction, polymerized rosin to which dimerization of rosin is carried out.

29. (New) The solder deposition method according to claim 26, wherein the organic sulfonic acid is methanesulfonic acid, 2-hydroxyethanesulfonic acid, 2-hydroxypropane-1-sulfonic acid, trichloromethanesulfonic acid, trifluoromethanesulfonic acid, benzenesulfonic acid, toluenesulfonic acid, phenolsulfonic acid, cresolsulfonic acid, anisolesulfonic acid or naphthalenesulfonic acid, or mixtures thereof.